In the claims:

Claims 1-102 (canceled)

103. (previously presented) A multilayer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

a two-sided conducting layer comprising an ultra-thin metal film and having the light energy conversion layer secured to a first side thereof;

a charge separation layer secured to a second side of the conducting layer;

the conducting layer providing ballistic transport of charge carriers from the light energy conversion layer to the charge separation layer;

wherein the conducting layer and the charge separation layer define a metal-insulator-metal junction.

104. (previously presented) A multilayer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

a two-sided conducting layer comprising an ultra-thin metal film and having the light energy conversion layer secured to a first side thereof;

a charge separation layer secured to a second side of the conducting layer;

the conducting layer providing ballistic transport of charge carriers from the light energy conversion layer to the charge separation layer;

wherein the charge separation layer comprises a semiconductor of a first type, and further including a semiconductor of the opposite type positioned between the charge separation layer and the conducting layer to provide increased barrier height and photovoltage.

105. (canceled)

106. (previously presented) A multilayer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

a two-sided conducting layer comprising an ultra-thin metal film and having the light energy conversion layer secured to a first side thereof;

a charge separation layer secured to a second side of the conducting layer;

the conducting layer providing ballistic transport of charge carriers from the light energy conversion layer to the charge separation layer;

wherein the charge separation layer comprises an insulator/semiconductor multi-layer.

107. (canceled)

108. (canceled)

109. (canceled)

110. (canceled)

111. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer; and

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer.

112. (previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer; and

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer is formed from a material selected from the group consisting of merbromin, o-phenylxanthene, and iron cyanate.

113. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer is formed from a material including at least one organic dye.

114. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer is formed from a material characterized by nanoclusters.

115. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer; and

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer is formed from a material characterized by nanostructures.

116. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer is formed from a material including at least one metal cyanate.

117. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer is formed from a material including at least one metal photocyanate.

118. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer comprises a plurality of different photosensitive means to maximize capture of the incident light spectrum.

119. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer comprises a plurality of photosensitive means structures.

120. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer; and

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer has a light receiving surface which is patterned to provide increased surface area.

121. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer is porous to provide increased surface area.

122. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer; and

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the semiconductor charge separation layer comprises an organic semiconductor.

123. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the semiconductor charge separation layer comprises an insulator formed on an organic conductor.

124. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting front contact layer having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the front contact layer;

the front contact layer providing ballistic transport of electrical energy from the light energy conversion layer to the charge separation layer; and

an electrically conductive back contact secured to the second side of the charge separation layer; and

wherein the semiconductor charge separation layer comprises an insulator/semiconductor multi-layer.

125. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the semiconductor charge separation layer is formed from template molecules to provide an increased surface area.

126. (canceled)

127. (canceled)

128. (Previously presented) A multi-layer solid-state device for producing electrical power from light comprising:

a light energy conversion layer containing photosensitive means;

an ultra-thin, two sided, electrically conducting metal film having the light energy conversion layer secured to a first side thereof;

a two sided semiconductor charge separation layer having one side thereof secured to the second side of the metal film;

the metal film and the semiconductor charge separation layer defining a Schottky barrier;

the metal film for providing ballistic transport of electrical energy from the light energy conversion layer to the semiconductor charge separation layer which eliminates the need for an electrolyte when producing electrical power from light that impinges upon the light energy conversion layer;

an electrically conductive back contact secured to the second side of the semiconductor charge separation layer; and

wherein the light energy conversion layer has a light receiving surface, and wherein the light receiving surface is provided with anti-reflection coating to reduce reflective light.